

Indicated and measured reserves can be determined in many parts of the site because many drill holes are spaced at approximately 500 feet. Inferred reserves can be mapped elsewhere on the site where drill hole spacing is greater.

Laboratory analysis from this study indicates sand from the deposit can be beneficiated to glass sand specifications. Chem-Nuclear (1993) determined a total gross tonnage of 36.6 million short tons in the area. Details of Chem-Nuclear's sand reserve calculation is included here because the report was not widely distributed.

Sand thickness ranges from 0 to more than 50 feet (Figure 4). Areas with sand thickness greater than 20 feet occur in several areas. One of these in the northern part of the site has 695 acres. The second largest deposit of Pinehurst sand is located in the eastern part of the site in the vicinity of borehole R7. A small abandoned sand mine is on the western edge of this deposit. A smaller sand deposit is situated to the south in the vicinity of borehole R8. Other deposits of Pinehurst Formation sand 20 or more feet thick in the site are relatively small.

The largest deposit is north of the pipeline and east of Secondary Road 1615 and covers 411 acres. Thicknesses of sand in this area include 25 acres of 20-30 feet, 153 acres of 30-40 feet, 107 acres of 40-50 feet, and 26 acres of 50 feet.

The gross tonnage of sand in the larger area can be estimated as follows:

Assumption: Pounds per cubic foot	=	115
Knowns: Pounds per short ton	=	2,000
Cubic feet per acre foot	=	43,560
Short tons sand per acre foot	=	2,505

$$(115 \times 43,560)/2000$$

Calculation tonnage (short tons) = 2,505 x acres x sand thickness (average feet):

20' - 30' (25') area tonnage	=	2,505 x 125 x 25	=	7,828,125
30' - 40' (35') area tonnage	=	2,505 x 153 x 35	=	13,414,275
40' - 50' (45') area tonnage	=	2,505 x 107 x 45	=	12,061,575
50' + area tonnage	=	2,505 x 26 x 55	=	3,582,15

Total gross tonnage (short tons) in area	=	36,886,125
--	---	------------

The glass sand product obtained by attrition scrubbing, sizing, and magnetic separation contained 0.13 to 0.16%  $Al_2O_3$ , 0.02 to 0.04%  $Fe_2O_3$ , less than 0.02%  $TiO_2$ , and traces of other minor elements such as Zn, Pb, Mo, Cu, and Cr. This product was found suitable for glass sand application and the physical and chemical characteristics were well within the specifications for typical glass sand (see Appendix).